

WHAT IS CLAIMED IS:

1. A deflection yoke for a cathode ray tube mounted with a panel, a funnel, an electron gun for emitting electron beams, and a deflection yoke for deflecting the electron beams emitted from the electron gun, the deflection yoke comprising:

a horizontal deflection coil for deflecting the electron beams in the horizontal direction;

a vertical deflection coil for deflecting the electron beams in the vertical direction;

a holder for supporting and at the same time insulating the horizontal and vertical deflection coils; and

a ferrite core for reducing a leakage flux on a return path of magnetic fields generated by the horizontal and vertical deflection coils, where a thickness of the ferrite core is less than 6mm, and given that maximum and minimum thickness points exist in the ferrite core, the maximum thickness point of the ferrite core is not less than 3mm.

2. The deflection yoke according to claim 1, wherein a thickness at the minimum thickness point of the ferrite core is not less than 2mm.

3. The deflection yoke according to claim 1, wherein a thickness at the maximum thickness point of the ferrite core ranges from 4mm to 6mm.

4. The deflection yoke according to claim 1, wherein when a length of the horizontal deflection coil from an end of a neck side to an end of a screen side is L_h , and a length of the ferrite core from an end of a neck side to an end of a screen side is L_f , the end of the neck side of the

ferrite core to the end of the screen side of the ferrite core lies within a range from $0.1L_h$ to $0.9L_h$ of the horizontal deflection coil.

5. The deflection yoke according to claim 1, wherein a length, designated by L_f , of the ferrite core between an end of a neck side and an end of a screen side is not greater than 55mm and not less than 35mm.

6. The deflection yoke according to claim 1, wherein a cross-section of the ferrite core is circular or oval.

7. The deflection yoke according to claim 1, wherein a thickness of an end of a neck side of the ferrite core is not greater than 5mm and not less than 4mm.

8. The deflection yoke according to claim 1, wherein a ratio of the maximum thickness of the ferrite core to the maximum thickness of an end of a neck side of the ferrite core is not greater than 1.2 and not less than 1.0.

9. The deflection yoke according to claim 1, wherein a ratio of a thickness at a $1/3$ point of the length of the ferrite core starting from an end of a screen side of the ferrite core to the maximum thickness of an end of a neck side of the ferrite core is not greater than 1.0 and not less than 0.8.

10. The deflection yoke according to claim 1, wherein the ferrite core is a divisional ferrite core.

11. The deflection yoke according to claim 1, wherein the cathode

ray tube to which the deflection yoke is applied is a monitor.

12. The deflection yoke according to claim 11, wherein a ratio of a maximum inside diameter of an end of a neck side of the ferrite core to the maximum thickness of the ferrite core is not greater than 10.5 and not less than 7.0.

13. The deflection yoke according to claim 1, wherein the cathode ray tube to which the deflection yoke is applied is a color television.

14. The deflection yoke according to claim 13, wherein a ratio of a maximum inside diameter of an end of a neck side of the ferrite core to the maximum thickness of the ferrite core is not greater than 12.5 and not less than 9.0.

15. The deflection yoke according to claim 1, wherein the maximum thickness point of the ferrite core exists between an end of a neck side of the ferrite core and $1/2L_f$, where L_f is the length of the ferrite core.

16. The deflection yoke according to claim 15, wherein a thickness at the maximum thickness point of the ferrite core is not greater than 5.5mm and not less than 4mm.

17. The deflection yoke according to claim 1, wherein the horizontal deflection coil is a saddle deflection coil.

18. The deflection yoke according to claim 1, wherein the vertical deflection coil is a saddle deflection coil.

19. The deflection yoke according to claim 1, wherein the vertical deflection coil is a toroidal deflection coil.

20. A deflection yoke for a cathode ray tube mounted with a panel, a funnel, an electron gun for emitting electron beams, and a deflection yoke for deflecting the electron beams emitted from the electron gun, the deflection yoke comprising:

a horizontal deflection coil for deflecting the electron beams in the horizontal direction,

a vertical deflection coil for deflecting the electron beams in the vertical direction;

a holder for supporting and at the same time insulating the horizontal and vertical deflection coils; and

a ferrite core for reducing a leakage flux on a return path of magnetic fields generated by the horizontal and vertical deflection coils, where a thickness of the ferrite core is less than 6mm and maximum and minimum thickness points exist in the ferrite core and the maximum thickness point of the ferrite core is located between a end of a neck side of the ferrite core and $1/2 L_f$, wherein L_f is a length of the ferrite core.

21. The deflection yoke according to claim 20, wherein a thickness at the minimum thickness point of the ferrite core is not less than 2mm.

22. The deflection yoke according to claim 20, wherein a thickness at the maximum thickness point of the ferrite core ranges from 4mm to 6mm.

23. The deflection yoke according to claim 20, wherein when a length of the horizontal deflection coil from an end of the neck side to an end of a screen side is L_h , and a length of the ferrite core from an end of a neck side to an end of the screen side is L_f , the end of the neck side of the ferrite core to the end of the screen side of the ferrite core lies within a range from $0.1L_h$ to $0.9L_h$ of the horizontal deflection coil.

24. The deflection yoke according to claim 20, wherein the length of the ferrite core between the end of the neck side and an end of a screen side is not greater than 55mm and not less than 35mm.

25. The deflection yoke according to claim 20, wherein a cross-section of the ferrite core is circular or oval.

26. The deflection yoke according to claim 20, wherein a thickness of the end of the neck side of the ferrite core is not greater than 5mm and not less than 4mm.

27. The deflection yoke according to claim 20, wherein a ratio of the maximum thickness of the ferrite core to the maximum thickness of the end of the neck side of the ferrite core is not greater than 1.2 and not less than 1.0.

28. The deflection yoke according to claim 20, wherein a ratio of a thickness at a $1/3$ point of the length of the ferrite core starting from an end of the screen side of the ferrite core to the maximum thickness of the end of the neck side of the ferrite core is not greater than 1.0 and not less than 0.8.

29. The deflection yoke according to claim 20, wherein the ferrite core is a divisional ferrite core.

30. The deflection yoke according to claim 20, wherein the cathode ray tube to which the deflection yoke is applied is a monitor.

31. The deflection yoke according to claim 30, wherein a ratio of a maximum inside diameter of the end of the neck side of the ferrite core to the maximum thickness of the ferrite core is not greater than 10.5 and not less than 7.0.

32. The deflection yoke according to claim 20, wherein the cathode ray tube to which the deflection yoke is applied is a color television.

33. The deflection yoke according to claim 32, wherein a ratio of a maximum inside diameter of the end of the neck side of the ferrite core to the maximum thickness of the ferrite core is not greater than 12.5 and not less than 9.0.

34. The deflection yoke according to claim 20, wherein the horizontal deflection coil is a saddle deflection coil.

35. The deflection yoke according to claim 20, wherein the vertical deflection coil is a saddle deflection coil.

36. The deflection yoke according to claim 20, wherein the vertical deflection coil is a toroidal deflection coil.

37. A deflection yoke for a cathode ray tube mounted with a panel, a funnel, an electron gun for emitting electron beams, and a deflection yoke for deflecting the electron beams emitted from the electron gun, the deflection yoke comprising:

a horizontal deflection coil for deflecting the electron beams in the horizontal direction;

a vertical deflection coil for deflecting the electron beams in the vertical direction;

a holder for supporting and at the same time insulating the horizontal and vertical deflection coils; and

a ferrite core for reducing a leakage flux on a return path of magnetic fields generated by the horizontal and vertical deflection coils, where the funnel has a yoke placement portion on which the yoke is mounted, and a cross- section of an inner surface of the yoke placement portion or a cross- section for both the inner and an outer surface of the yoke placement portion gradually changing from a circular shape to a non-circular shape approaching a screen side from a neck side, and a maximum thickness point of the ferrite core ranges from 3mm to 6mm in thickness.

38. The deflection yoke according to claim 37, wherein a thickness at the minimum thickness point of the ferrite core is not less than 2mm.

39. The deflection yoke according to claim 37, wherein a thickness at the maximum thickness point of the ferrite core ranges from 4mm to 6mm.

40. The deflection yoke according to claim 37, wherein when a

length of the horizontal deflection coil from an end of the neck side to an end of the screen side is L_h , and a length of the ferrite core from an end of a neck side to an end of a screen side is L_f , the end of the neck side of the ferrite core to the end of the screen side of the ferrite core lies within a range from $0.1L_h$ to $0.9L_h$ of the horizontal deflection coil.

41. The deflection yoke according to claim 37, wherein a length of the ferrite core from end of the neck side to an end of a screen side is not greater than 55mm and not less than 35mm.

42. The deflection yoke according to claim 37, wherein a cross-section of the ferrite core is circular or oval.

43. The deflection yoke according to claim 37, wherein a thickness of the end of the neck side of the ferrite core is not greater than 5mm and not less than 4mm.

44. The deflection yoke according to claim 37, wherein a ratio of the maximum thickness of the ferrite core to a maximum thickness of the end of the neck side of the ferrite core is not greater than 1.2 and not less than 1.0.

45. The deflection yoke according to claim 37, wherein a ratio of a thickness at a $1/3$ point of the length of the ferrite core starting from an end of a screen side of the ferrite core to a maximum thickness of the end of the neck side of the ferrite core is not greater than 1.0 and not less than 0.8.

46. The deflection yoke according to claim 37, wherein the ferrite

core is a divisional ferrite core.

47. The deflection yoke according to claim 37, wherein the cathode ray tube to which the deflection yoke is applied is a monitor.

48. The deflection yoke according to claim 47, wherein a ratio of a maximum inside diameter of the end of the neck side of the ferrite core to the maximum thickness of the ferrite core is not greater than 10.5 and not less than 7.0.

49. The deflection yoke according to claim 37, wherein the cathode ray tube to which the deflection yoke is applied is a color television.

50. The deflection yoke according to claim 49, wherein a ratio of a maximum inside diameter of the end of the neck side of the ferrite core to the maximum thickness of the ferrite core is not greater than 12.5 and not less than 9.0.

51. The deflection yoke according to claim 37, wherein the maximum thickness point of the ferrite core exists between the end of the neck side of the ferrite core and $1/2L_f$, where L_f is a length of the ferrite core.

52. The deflection yoke according to claim 51, wherein a thickness at the maximum thickness point of the ferrite core is not greater than 5.5mm and not less than 4mm.

53. The deflection yoke according to claim 37, wherein the

horizontal deflection coil is a saddle deflection coil.

54. The deflection yoke according to claim 37, wherein the vertical deflection coil is a saddle deflection coil.

55. The deflection yoke according to claim 37, wherein the vertical deflection coil is a toroidal deflection coil.